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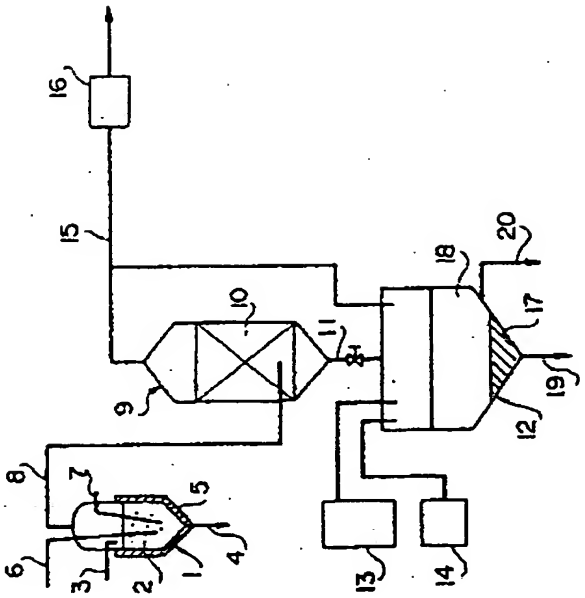
TITLE : METHOD FOR RECOVERING RUTHENIUM FROM RADIOACTIVE WASTE



ABSTRACT : PURPOSE: To recover Ru in the form of metal, by making vaporized RuO_4 be adsorbed by an adsorbent and by subjecting the above to reduction melting together with a reducing agent in a method for oxidizing Ru in waste and vaporizing in the form of RuO_4.

CONSTITUTION: While heating Ru-containing radioactive waste 2 placed in a reaction vessel 1, an oxidizing agent such as ozone is blown through a blowing pipe 6 and, simultaneously, a carrier gas such as air is supplied through a supply pipe 7. Then, the above-mentioned Ru is oxidized into RuO_4, which is introduced into an adsorbing column 9 and adsorbed by an adsorbent 10 of inorganic type, such as silica gel and zeolite, or of organic type, such as polyethylene, in the column 9. The adsorbent 10 by which RuO_4 is adsorbed is introduced into a reduction melting furnace 12, and a reducing agent of solid type, such as sugar, or gas type, such as H_2 and CH_4, and also a low-m.p. metal, such as lead and zinc, are supplied from a device 13 and a device 14, respectively, into the furnace 12, and then, the above-mentioned materials are heated and melted. By this method, the adsorbed RuO_4 is reduced into Ru and simultaneously mixed with the low-m.p. metal, and collects in the bottom of the furnace 12 in the form of an alloy 17.